H2-0108N REPORT (General Tasks)

Site: Nauru

Dates on site: 31Aug to 04Sep

Team Members:
- Troy Culgan
- Colin Maxfield

TASKS PERFORMED

1. **H2 Generator Maintenance**

30Aug
- Change resin filter
- Replace reed switch- bell tank
- Check pump down time - 40 sec
- Check for water in storage tank – 350ml
- Clean air intake

31Aug
- Check electrical cabinet pressurization system
- Check control system
- Check and clean water system
- Compressor overhaul
- Perform leak tests
- Check electrolytic cells

01Sep
- Remote Balloon Launcher maintenance
- General safety inspection

02Sep
- Replace Brusag solar tracker(WD24217) with Kipp & Zonen tracker (WD33064)
- Brusag tracker (WD24217) installed on Calrad stand

03Sep
- Final inspection electrolyser

2. **Solar tracker repair, installation**

01Sep
- Upon arrival confirmed that the Brusag tracker was tracking with the sun covering the center, and to the outer edge of white section of the NIP bull's eye. The instruments were fully shaded.

02Sep
- Kipp & Zonen tracker installed on skyrad stand in place of Brusag tracker, Brusag tracker installed on Cal stand (instruments on the brusag are not connected to a logger.

- K&Z serial number 010175 (WD33064)
- Brusag Tracker serial number INTRA 14 (WD24217)
- Replacement of tracker went smoothly, only one minor detail to be considered for RESET 14. The base plate assembly that was sent has a 6 inch diameter and the K&Z tracker base is 8 inch with mounting and level bolts at 7.25 inch. Fortunately there was another set of holes that could be used with this base. Leveling and base securing was achieved using these same bolt holes. Reference page 9 and 17, 2AP Installation and Operations Manual. Reference page 1, 2AP Accessory Manual

03Sep

- Final inspection of K&Z tracker. Cables secured and will not impede travel of tracker.
- Positioning and shading appear correct.
- Check tracker for alignment and cable security

3. Replace MWR heater assembly

31Aug

- MWR heater fan assembly replaced, Fan had stopped due to corrosion of fan. Old assembly can be reused as an emergency spare if fan unit is replaced. Fan unit is Comair Rotron model MX2B3

4. Skyrad Stand Radiometer reporting repair

30Sep

- Replace fuse Skyrad logger, DC power distribution (Fuse 2 amp)
- Checked the Skyrad Logger and there was a blown fuse that caused the data to stop flowing. Replaced the fuse with a slow blow type.

02Sep

- Replace fuse Skyrad logger,DC power distribution (Fuse 2 amp Slo Blow)

5. Nauru Island Effect Site(NIES) recon near the Menen Hotel

03Sep

- Maxfield visited the far north, 2nd floor room of the Menen Hotel and sketched the layout of electrical Outlets in the room. One in the bathroom(Either 3 Pin 240V or 2 Pin 115V) and eight in the main room(3 Pin 240V GPO).
- The GPOs are used as follows: 3 for bedside lamps, 1 for alarm clock/fan controls, 1 for fridge, 1 for TV, and the 2 in the bathroom for hair dryer and shaver.
- One circuit breaker (16amps) is provided solely for the air conditioner.
- One circuit breaker (10amps) is provided for lighting and servides 4 rooms.
- One circuit breaker (16amps) is provided for power and servies 2 rooms.

6. Other

07Sep

- Mark Gleadhill of Hastings Deering on site and commenced diesel generator(Genset) maintenance.

Appendix

BRUSAG SOLAR TRACKER CONFIGURATON UPON DEPARTURE (03SEP01)

```
SUN
MON

  INTRA-Monitor main menu:  90896.1200
L cLock menu       T Temperature
C Communication    S Sun monitor
I Installation     P tracker Parameter
D Driver menu      N load New program **
O Outputs          A show lAst events
E Eeprom           W passWord
H Help             V saVe all to EEPROM
X eXit
MO
select one of the following:
number of the output 1..4
X
 ==> monitor exit
MON

  INTRA-Monitor main menu:  90896.1200
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E Eeprom           W passWord
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X eXit
C
  Communication Menu
S Select serial       B Baudrate
F data Format         P Parity
O shOw settings       V saVe
H Help                X eXit
O
actual serial 0
Baudrate:      9600
```

```
data- stopbits: 8 1
 Parity:        none
X
úIxiting com menu
  Installation Menu
S Site parameter       O shOw parameter
A Alignment para.**    I Init-mode
R axisRange **         C Correction mode
M Mounting **          H Help
V saVe                 X eXit
O
show installation parameters
longitude :-166.92
latitude :-0.52
altitude a.s.l.:   9
vert. axis azimuth :-59.668
Z-distance. vert. axis : 0.278
misalignment azimuth : 8.906
range primary:-270..270
range secondary: -5.. 90
correction mode: angle correction
mounting: Primary axis vertical
X
 exiting installation menu
D
  Driver Menu
E trans. Errors    S Set speed **
P show Position    F redeFine Pos **
D Drive test       M Manual rotate
I Index error      R dRive status
O show vOltage     G Gain and gear **
H Help             X eXit
P
Primary   : -106.97  Secondary :    1.85
O
 Voltage :  26.7
R
Primary   : ok
Secondary : ok
Init Done
X
 exiting drive menu
O
select one of the following:
number of the output 1..4
1
```

```
 Menu Output  1
S Show setting     E Enable output
P set Parameter    T set Trigger
C set sep. Char    L set Label
H Help   V saVe    X eXit
S

setting of output  1

output is disabled
Trigger mode is trigger command  "Q"
separating char " "
label ""
parameter
 p0: trackmode p1: cr p2: pist p3: psoll
 p4: cr p5: sist p6: ssoll
X
 exiting output menu
O
select one of the following:
number of the output 1..4
2
 Menu Output  2
S Show setting     E Enable output
P set Parameter    T set Trigger
C set sep. Char    L set Label
H Help   V saVe    X eXit
S

setting of output  2

output is disabled
Trigger mode is time interval    1 seconds
separating char " "
label ""
parameter
 p0: cr p1: pist p2: psoll p3: cr
 p4: sist p5: ssoll
X
 exiting output menu
O
select one of the following:
number of the output 1..4
3
 Menu Output  3
S Show setting     E Enable output
```

```
P set Parameter    T set Trigger
C set sep. Char    L set Label
H Help   V saVe    X eXit
S

setting of output  3

output is disabled
Trigger mode is time interval    1 at    0 minutes
separating char " "
label ""
parameter
 p0: cr p1: q1 p2: q2 p3: q3
 p4: q4 p5: pdelta p6: sdelta
X
 exiting output menu
O
select one of the following:
number of the output 1..4
4
 Menu Output  4
S Show setting     E Enable output
P set Parameter    T set Trigger
C set sep. Char    L set Label
H Help   V saVe    X eXit
S

setting of output  4

output is disabled
Trigger mode is interval of measurement
separating char " "
label ""
parameter
 p0: test
X
 exiting output menu
S
  Sun Monitor Menu
R Read buffer      F Fill buffer
C Clear buffer     N Number of entrys
E clear Entry      S Show sun intensity
P Parameter
H Help             X eXit
P
  Sun monitor parameter Menu
```

```
P show Parameter  O Offsets quadr.**
R iRange **       I I0 **
S Sigma **        F Factor **
C Criterion **    V saVe
H Help            X eXit
P
show sun monitor parameters
offset quadr. primary  :-0.07500
offset quadr. secondary :-0.04500
Factor to arc :0.12000
Irange in percent :30.00
I0 : 2.500
Sigma : 0.165
necessary buffer entrys in percent : 70
min. elevation : 15
X
 exiting parameter menu
P
  Sun monitor parameter Menu
P show Parameter  O Offsets quadr.**
R iRange **       I I0 **
S Sigma **        F Factor **
C Criterion **    V saVe
H Help            X eXit
P
show sun monitor parameters
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necessary buffer entrys in percent : 70
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X
 exiting parameter menu
X
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X
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MON

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X eXit
A

160801 013406 power up
160801 013408 Primary axis    error of hall sensor or no motor connected
160801 015326 nmi occured
160801 023910 power up
160801 023916 initialization
160801 023922 Secondary axis  out of low range
160801 024701 nmi occured
160801 032105 power up
160801 125626 Secondary axis  out of low range
280801 064338 Primary axis    out of low range
280801 064633 Primary axis    out of low range
290801 055535 Primary axis    out of low range
300801 053153 Primary axis    out of low range
300801 053302 Primary axis    out of low range
300801 053337 Primary axis    out of low range
300801 053616 Primary axis    out of low range
300801 053729 Primary axis    out of low range
300801 054453 Primary axis    out of low range
310801 043938 Primary axis    out of low range
310801 044619 Primary axis    out of low range
310801 044631 Primary axis    out of low range
310801 044902 Primary axis    out of low range
310801 045424 Primary axis    out of low range
310801 125230 Secondary axis  out of low range
010901 040244 Primary axis    out of low range
010901 040840 Primary axis    out of low range
010901 043126 Primary axis    out of low range
010901 044652 Primary axis    out of low range
010901 044925 Primary axis    out of low range
010901 125210 Secondary axis  out of low range
X
 ==> monitor exit
X
S
SUN
```